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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,626	09/29/2003	Jungwon Suh	2003P52600US (I331.112.10)	2545
7590 05/02/2006 Dicke, Billig & Czaja, PLLC Fifth Street Towers Suite 2250 100 South Fifth Street Minneapolis, MN 55402			EXAMINER KO, DANIEL BOKMIN	
			ART UNIT 2189	PAPER NUMBER
DATE MAILED: 05/02/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/673,626	SUH, JUNGWON	
	<b>Examiner</b>	<b>Art Unit</b>	
	Daniel B. Ko	2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10, 16 and 18 is/are allowed.
- 6) ☒ Claim(s) 1, 8-9, 11-15 and 17 is/are rejected.
- 7) ☒ Claim(s) 2-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

This action is responsive to the Amendment filed on 2/13/2006.

#### ***Claim Objections***

Claim 1 is objected to because of the following informalities: Claim 1, lines 8 contains "and or" and it causes ambiguity. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claim 1 rejected under 35 U.S.C. 102(e) as being anticipated by Keeth et al. (US Patent 6,807,114 B2), hereinafter simply Keeth.

Regarding claim 1, Keeth teaches a dynamic random access memory device capable of converting from a full density memory device to a reduced density memory device to compensate for cell failures in a plurality of cell blocks, the memory device comprising:

a row address mapping fuse (Fig. 1, element 51, fuse bank) for selectively determining row address combinations void of cell failures and capable of storing data bits (column 4, lines 40-61); and row address mapping logic (Fig. 2, element 52, column select circuit) coupled to the row address mapping fuse for receiving a row address mapping signal from the row address mapping fuse and receiving row address signals and or routing specific data bits to the row address combinations void of cell failures and capable of storing the data bits (column 5, lines 62-67, column 6, lines 1-58).

Keeth's description teaches mainly for defective column replacement but it discloses that the system and method can also be used to replace defective rows of memory cells in the substantially the same manner (column 2, lines 61-63).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 8-9, 11-15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keeth (US Patent 6,807,114 B2) and Cowles et al. (US Patent 6,556,497 B2), hereinafter simply Cowles.

Regarding claims 8 and 14, Keeth teaches a method comprising:

selectively determining a reduced density address combination having addresses which omit cell blocks having cell block failures (Keeth, column 5, lines 19-61); and  
storing data bits at an address (Keeth, column 6, lines 9-15) within the reduced density column address combination.

Keeth fails to teach a switching the memory device between a full density mode and a reduced density node. Cowles teaches a dual mode, full density/half density SDRAM (See abstract). Cowles teaches a reduced density enable signal for switching the memory device between a full density mode and a reduced density mode (column 4, lines 31-61). At the time of invention it would have been obvious to a person of ordinary skill in the art to combine the Keeth with Cowles. The motivation for doing so would have been a flexibility of density mode. The DRAM can be used as a full density mode or a half density mode based on the cells failure.

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Regarding claims 9 and 15, Cowles teaches a method of claim 8, and further comprising:

switching the memory device between a full density mode and a reduced density mode (column 4, lines 31-61).

Regarding claims 11 and 12, Keeth teaches a method, wherein the step of selectively determining a reduced density address combination further comprises:

selectively determining a plurality of addresses which avoid cell blocks having cell block failures (column 5, lines 19-61).

Regarding claim 13, Keeth teaches a method, wherein the step of selectively determining a reduced density address combination further comprises:

selectively determining a reduced density address combination based upon a row address mapping signal in combination with a logic value signal (column 5, lines 62-67, column 6, lines 1-58).

Regarding claim 17, Keeth teaches a dynamic random access memory, wherein the row address mapping logic utilizes a selection table defining selected locations void of cell failures and capable of storing the data bits (column 5, lines 19-30). Keeth discloses the defective column of memory cell and it is obvious that a selection table can be made defining selected locations void of cell failure.

***Allowable Subject Matter***

3. Claim 10, 16 and 18 are allowed.
4. Claims 2-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

Applicant's arguments with respect to claim 1 have been considered but they are not persuasive. Regarding claim 1, on page 7 of Amendment, Applicant argues that Keeth does not teach, show, or suggest a dynamic random access memory device capable of converting from a full density memory device to a reduced density memory device.

In response, it is noted that word, "capable" is used to define the limitation of converting from a full density memory device to a reduced density memory device. Capable means permitting an action to be performed, which in this case causes no weight to phrase, "converting from a full density memory device to a reduced density memory device", because there is no certainty that this function will perform in the device.

Furthermore, "a dynamic random access memory device capable of converting from a full density memory device to a reduced density memory device" phrase is in the preamble of claim 1. According to MPEP 2111.02, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations,

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then the preamble is not considered a limitation and is of no significance to claim construction.

Applicant's arguments, on page 9, 3<sup>rd</sup> paragraph of Amendment, with respect to claim 2 have been fully considered and are persuasive. Examiner withdraws the rejection of claims 2-7 under 35 U.S.C. §103(a).

Applicant's arguments with respect to claims 8-9, 11-15 and 17 have been fully considered but they are not persuasive. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, at the time of invention it would have been obvious to a person of ordinary skill in the art to combine the Keeth with Cowles. The motivation for doing so would have been a flexibility of density mode. The DRAM can be used as a full density mode or a half density mode based on the cells failure.



***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel B. Ko whose telephone number is 571-272-8194.

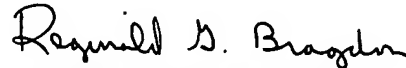
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reginald G. Bragdon can be reached on 571-272-4204. The fax phone number for the organization where this application or proceeding is assigned is 703-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel B. Ko  
AU 2189



REGINALD G. BRAGDON  
PRIMARY EXAMINER